

INTERNATIONAL AFFAIRS COMMITTEE

To the Venerable, the 136th General Assembly:

CARING FOR GOD'S CREATION

INTRODUCTION

Warming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperature, widespread melting of snow and ice, and rising global average sea level.¹

The earth, and all that is in it, is a gift from God, and to thrive, human beings are called to honour God as Creator. Human life relies on the stability of the ecosystem for survival. The climate is a global, public good. Countries in the global north are responsible for producing most of the greenhouse gas emissions that are changing the climate. Citizens of the global south, who have produced the least amount of greenhouse gas emissions, are the most vulnerable to the severest impacts of climate change, and are least able to adapt. This report considers the impact of climate change on the global south, and suggests ways to respond to this challenge.

A THEOLOGICAL PERSPECTIVE ON CLIMATE CHANGE

The Proclamation

The earth is the Lord's and all that is in it.² (Psalm 24:1)

For God's people, consideration of the planet's wellbeing begins with proclamation and praise. Living Faith says, "The living God is Lord, Creator of all, Sustainer and Ruler of the universe... We hold in reverence the whole creation as the theatre of God's glory and action" (Living Faith, 2.1.1, 2.1.2). The Psalmist sings "Let everything that breathes praise the Lord!" (Psalm 150:6).

The Covenant Relationship

In the creation account of Genesis 1, every day ends with God casting the divine eye over the day's work and calling it good, taking delight in its beauty, diversity and wonder (Genesis 1:31). In Genesis 3, God walks in the garden "at the time of the evening breeze" and seeks an encounter with the human beings, male and female, made in God's image (Genesis 1:26). Though human beings turn from God, God persists in love and mercy and the promise of abundant life for all. The covenant made with Noah is "with all of creation" (Genesis 9:8-12). "God has brought into being an earth community based on the vision of justice and peace... All creation is blessed and included in this covenant" (Hosea 2:18ff).³

The Calling

God calls human beings to a special responsibility within creation: "God blessed them, and God said to them, 'Be fruitful and multiply, and fill the earth and subdue it; and have dominion... over every living thing that moves upon the earth'" (Genesis 1:28).

The words "subdue" and "dominion" in their basic meaning "to conquer" and "to rule," respectively, have been used to justify the exploitation of nature and the degradation of creation, for the benefit of humans. It is helpful, therefore, to recover their meaning in the broader biblical context of covenant relationship and the nature of God's rule.⁴

The use of "subdue" in Genesis 1 suggests a differential in power between humans and the rest of creation.⁵ Unlike other creatures, humans have the capacity to think and choose, and to reflect God's nature of love, mercy and justice. Humans are invited to assist God as "co-workers in the creation."⁶

"Dominion" indicates royal rule but does not necessarily include coercion or force. A ruler can exercise dominion for good such as to strengthen the weak and heal the sick (Ezekiel 34:2-4). In Genesis 1:26, 28 "human dominion, limited to the earth and the animal kingdom, derives from being made in the image of God and is understood as an aspect of God's blessing."⁷ The blessing is not just for humans but for the whole creation.

Human beings, understanding their creation in God's image, have too often interpreted God's power and might as license to rule over the rest of God's creation, making it subservient to human will. The Bible, though, also portrays God as the source and sustainer of life (Isaiah 40:28-29), shepherd (Ezekiel 34:15), creator and provider (Psalms 104) and compassionate liberator (Exodus 3:7-8). The image of God and true humanity is seen in Jesus Christ (Colossians 1:15-20). In Christ, who humbled himself (Philippians 2:5-11), dominion is expressed not as mastery or subjugation but as self-giving, unconditional love. Created and sustained by this love, humans are "to care for the earth even as the Creator has already begun to care, to protect and enhance the earth as God's creation."⁸

Professor Puleng LenkaBula, senior lecturer in the Department of Systematic Theology and Theological Ethics, University of South Africa, writes that "biblical witness attests to the notion that humanity must preserve and care for the world around us and that as stewards and not dominators, people are responsible for the well-being of God's creation."⁹ Similarly, Living Faith section 2.4.1 states: "Our care for the world must reflect God's care. We are not owners, but stewards of God's good earth". Dominion as stewardship is a "way of being-with,"¹⁰ an aspect of covenant relationship that shapes our identity and our actions.

The Lament

The regrettable truth is that human beings have forgotten the covenant relationship by seeking mastery over others and over nature. Science has brought much good but has also given humans the capacity to pollute and destroy. The prophet Isaiah links human lust for power to the suffering of nature as he paints a picture of desolation that is frighteningly current:

The earth dries up and withers,

the world languishes and withers;
 the heavens languish together with the earth.
 The earth lies polluted under its inhabitants;
 for they have transgressed laws, violated the statutes,
 broken the everlasting covenant. (Isaiah 24:4-5)

The Need for Repentance

Humans are called to “return to the Lord, that he may have mercy...and to our God, for he will abundantly pardon” (Isaiah 55:7b). The Accra Confession of the World Alliance of Reformed Churches states, “We confess our sin in misusing creation and failing to play our role as stewards and companions of nature.”¹¹ We have failed to grasp the interrelatedness of all living things and that “human life depends on the created world” (Living Faith 2.4.1).

The Promise and the Hope

The prophet Joel envisions a day of abundance when the soil and the animals of the field can lose their fear and rejoice in God who has done great things (Joel 2:23-24). The Book of Revelation promises “a new heaven and a new earth” (Revelation 21:10).

As God’s people who care for our children and future generations, we live by this promise and hope. “Our stewardship calls us to explore ways of love and justice in respecting God’s creation and in seeking its responsible use for the common good” (Living Faith 2.4.2).

THE SCIENCE OF CLIMATE CHANGE

Concerned with the well-being of all of life we welcome the truths and insights of all human skill and science about the world and the universe. (Living Faith 2.4.1)

Commonly Used Terms

Climate refers to a region’s prevailing weather and temperature patterns, established over time. The earth’s ecosystem is dynamic, and over time the climate changes. Global warming refers to an increase in the average temperature of the oceans and air near the earth’s surface.

Greenhouse gases (GHGs), such as carbon dioxide, methane and nitrous oxide, are emitted through natural processes (e.g. plant and animal respiration). They absorb and emit radiation, and affect the temperature of the atmosphere. When solar radiation hits the earth’s atmosphere, a portion of the radiation is reflected back into space while some is absorbed into the earth’s landmasses and oceans and becomes heat. Heat is radiated back into the atmosphere where it encounters GHGs that prevent it from escaping into space. This process is called the Greenhouse Effect.

Carbon dioxide (CO₂) is the most significant GHG emitted by human activity, primarily through fossil-fuel combustion. Carbon dioxide is the most harmful greenhouse gas because it is contributing the most to global warming. The combustion of fossil fuels produces energy to power homes and to power means of transportation. CO₂ is also emitted through deforestation (resulting in permanent land use change), and industrial processes. With the onset of the industrial revolution, fuelled by coal, humankind affected the ecosystem on an unprecedented scale. Over the last century, the surface temperature of the earth has risen 0.74 degrees Celsius.¹² The ten warmest years of the twentieth century occurred in the last fifteen years of the century.

Scientific Accuracy and Climate Change

Scientific accuracy is the result of many different scientists repeatedly testing a hypothesis, and relies upon establishing a high level of confidence in the likely outcome of experiments. A hypothesis is understood to be accurate if it stands up to repeated testing and review, and inaccurate if it fails to do so.

In 1979, the first world climate conference was called by the United Nation’s (UN) World Meteorological Organization (WMO) to discuss concerns that the continued expansion of humankind’s activities may cause significant extended regional and even global changes to the climate. In 1988 two UN organizations, the WMO and the Environment Programme, established the Intergovernmental Panel on Climate Change (IPCC) with a mandate that included identification of uncertainties and/or gaps in the current knowledge of climate change and its potential impacts.¹³

The IPCC is the leading global authority on climate change science. Approximately 2,500 scientists from all regions of the world examine climate change research from peer-reviewed publications. Since 1990 the IPCC has produced four Assessment Reports. Each report is reviewed by UN member states before publication.

The Fourth (and most recent) Assessment Report was published in 2007 and states:

There is very high confidence that the net effect of human activities since 1750 has been one of warming.¹⁴

Global atmospheric concentrations of carbon dioxide, methane and nitrous oxide have increased markedly as a result of human activities since 1750 and now far exceed pre-industrial values determined from ice cores spanning many thousands of years.¹⁵

The IPCC Assessment Reports are subject to rigorous evaluation. Processes are in place to ensure that the science is peer-reviewed and reflects the most precise data available. The conclusions drawn by the IPCC are based on a continuum of scientific probability. When the IPCC states that there is “very high confidence” in a statement, it means there is at least a 9 out of 10 chance of the statement being correct, based on the science reviewed. When a potential impact is described as being “very likely,” there is a greater than 90% probability of occurrence.¹⁶

There are some critics who challenge the scientific basis of the IPCC’s Assessment Reports and deny that there is evidence to support a global warming trend. There are also critics who acknowledge the existence of a global warming

trend, but deny that it is the result of human activity. On examination, there is little peer-reviewed scientific evidence to support these claims.¹⁷

There have been several events in the past year that have challenged the integrity of the IPCC's Fourth Assessment Report. In November 2009 over one thousand emails between the Climate Research Unit of the University of East Anglia and various scientists were released into the public domain. The content raised questions about the deliberate use (or misuse) of some climate change data by some scientists. The British newspaper *The Guardian* published an exhaustive twelve-article series investigating this incident. It concludes that this incident has brought to light the need for greater openness in climate change science, but states that "nothing uncovered in the emails destroys the argument that humans are warming the planet."¹⁸

Some observations made in the IPCC's Fourth Assessment Report, dealing with the recession of Himalayan glaciers, and when they are likely to disappear, were questioned. The IPCC investigated this claim. The IPCC has guidelines regulating which scientific source material can be used in the Assessment Report. The information on the Himalayan glaciers was from a document published by the World Wildlife Foundation. The document did not meet the IPCC's evidence guidelines, and should not have been used. The World Wildlife Foundation acknowledged using information about the possible future of Himalayan glaciers that proved to be incorrect, and expressed regret for this error. Mistakes must be corrected when discovered. These errors should not, however, undermine the integrity and scientific rigour of the IPCC's work.

IMPACTS OF CLIMATE CHANGE

The Global Climate – A Public Good

Since, as we believe, "the earth is the Lord's", the world's climate does not belong to any one individual, society or nation. Global climate is a public good. This confers stewardship responsibilities upon all of humanity, especially those who live in countries that produce a disproportionate share of GHGs.

Impacts on the Global South

We want to survive. (The Rev. Tofigo Falani, President of the Congregational Church of Tuvalu)¹⁹

The IPCC estimates that by the end of this century, more than a billion people will face food and water shortages. The geographical distribution of certain diseases is increasing. As conditions suitable for malaria-bearing mosquitoes spread, up to 400 million more people will be at risk from malaria and other vector diseases (like dengue fever). Specific regional impacts are explored in greater detail below.

Impacts on Small Islands

Sea level rise is expected to exacerbate inundation, storm surge, erosion and other coastal hazards, thus threatening vital infrastructure, settlements and facilities that support the livelihood of island communities.²⁰

By mid-century, climate change is expected to reduce water resources in many small islands, e.g. in the Caribbean and Pacific, to the point where they become insufficient to meet demand during low-rainfall periods.²¹

Tuvalu is a small island nation made up of six coral atolls and three reef islands near Fiji. It is the fourth smallest country in the world. The highest point on any of the atolls or reef islands is 4.6 metres above sea level. As surface and ocean temperatures rise, ocean levels rise. In the past few years, Tuvalu has lost one metre of land around the circumference of its largest atoll. Three thousand of its 12,000 inhabitants have been evacuated to New Zealand.²² Citizens of Tuvalu and other vulnerable low-lying small island nations will be among the first victims of rising sea levels.

Some island nations are preparing contingency plans. Mr. Mohamed Nasheed, president of the Maldives, is setting aside a portion of the country's annual tourist revenue and is investigating purchasing land from Sri Lanka, India or Australia in case rising sea levels force his nation's 300,000 citizens out of their island homes.²³

Impacts on Asia

Coastal areas, especially heavily populated megadelta regions...will be at greatest risk due to increased flooding from the sea...and flooding from rivers.²⁴

Bangladesh, India and Pakistan have the largest number of people living in poverty in the world. Many of these people live in the Low Elevation Coastal Zone, a coastal region less than ten metres above sea level. Rising sea levels, storm surges, coastal erosion and weak institutions or non-existent infrastructure to mitigate against the impacts of climate change all raise one compelling question – what will happen to the area's 130 million inhabitants?²⁵

Impacts on Africa

By 2020, the IPCC estimates that between 75 and 250 million people in Africa may be exposed to increased water shortages. In some countries, yields from rain-fed agriculture could be reduced by up to 50%. This would further adversely affect food security and exacerbate malnutrition and diseases.²⁶

Conflict

Beginning with the stories in Genesis of nomadic herdsmen coming to blows over access to watering holes in the desert, human history has seen countless instances of conflict over scarce resources.

The International Crisis Group agrees that climate change "can contribute to conditions that make [conflict] more likely or severe."²⁷ It identifies climate change as a "threat multiplier". While "environmental stress can form an important backdrop to future violence [and] reduce...avenues for conflict resolution, it is rarely sufficient in itself to explain

large-scale violence”. Where there is already political instability, economic inequality or ethnic tensions, climate change will make a bad situation worse.

The International Crisis Group cites the situation in Mali, where environmental changes have made survival difficult for the nomadic Tuareg people, and notes that conflict based on longstanding grievances has grown between the Tuareg people and the government. Government control has broken down in the northern region of the country.

The Pangani river basin runs down from Kilimanjaro to the Tanzanian coastal town of Pangani on the Indian Ocean. There are approximately 3.7 million people inhabiting the river’s 43,000 square-kilometre watershed. The river is fed primarily by the Kilimanjaro icecap and rainfall on the mountain’s hillsides. The highlands receive more rainfall than the lowlands. Since 1912, 75% of the icecap has retreated. Since 1948, the humidity on the mountain has decreased. The result has been a net reduction in the Pangani’s flow.

Historically the Pangani river watershed was controlled by customary law, enforced at the discretion of local community leaders. Local control ceased in 1972 when a centralized administration effectively bisected control of the watershed into highlands and lowlands. *Canadian Geographic* magazine reports that local control of the watershed system was efficient and accounted for both human need (between highlands and lowlands) and the overall wellbeing of the ecosystem. Over time, and under the centralized administration, relationships broke down between communities that had peacefully shared the watershed for centuries. Increasing use of water resources in the highlands reduced the quality and quantity of water available to lowland communities.²⁸ In 2000 violence broke out. Access to sufficient levels of clean water was at the heart of the conflict. While not the cause of conflict, water shortages, in part caused by climate change, exacerbated this situation.

In Northern Darfur (Sudan) precipitation has fallen by one third in the past 80 years. The United Nations Environmental Program reports that “the scale of climate change as recorded in Northern Darfur is almost unprecedented, and its impacts are closely linked to conflict in the region, as desertification has added significantly to the stress on traditional agricultural and pastoral livelihoods.”²⁹ It further reports that “central to keeping the peace will be the way in which the Sudan’s environment is rehabilitated and managed.”³⁰

Climate Change Induced Migration

In recent years, as many as 26 million people in the global south have been forced to leave their homes due to climate change. Some 200 million may be on the move by 2050.³¹ Senior officials in the European Union have issued warnings that Europe needs to prepare for climate change migrants.³² These EU officials also observed that all UN appeals for emergency aid in 2007, except one, were connected to climate change.

Climate Change and Poverty

According to Bishop Katherine Jefferts Schori, Primate of the Episcopal Church of the USA and a former professor of oceanography, two of the most significant crises facing our world, climate change and poverty, are profoundly interconnected. In her words “we must see everything, and everyone, as interconnected and intended by God to live in relationship.”³³

The poor in the global south face some of the most severe impacts of climate change, and are least able to cope. Reduced availability of fresh water and crop yields, combined with temperature change, rising sea-levels, and increases in the frequency and intensity of severe-weather events, could create large-scale human displacement. According to Siri Eriksen³⁴, a senior research fellow in sociology and human geography at the University of Oslo, multiple factors such as the spread of HIV/AIDS, the effects of economic globalization, the privatization of resources, and conflict converge with, and diminish a community’s ability to adapt to climate change.

In 2009, a team of researchers led by Purdue University’s Climate Change Centre published a landmark study that analysed the “potential economic influence of adverse climate events such as heat waves, drought and heavy rains” using both data from 20th century and projections for the 21st century.³⁵ The researchers concluded that climate change could deepen poverty in the global south and that it would have a particularly severe impact on urban workers as extreme weather conditions would affect agricultural productivity and raise the price of basic staple foods on which the urban poor rely.

Oxfam reports that if left unchecked, climate change could undo the gains that the world’s poorest countries have made in poverty-alleviation, and that an increase in the number of people suffering from hunger will be one of the most tragic consequences of climate change.³⁶

Gender Dimensions of Climate Change

The Honourable Angelo T. Reyes, Secretary of the Department of Energy (The Philippines), reflects on the intersection of gender, climate change and poverty at the 3rd Global Congress of Women in Politics and Governance: “Poverty has a woman’s face....With some exceptions, natural disasters and conflicts have a disproportionate impact on women and children, especially those who are poor. To aggravate matters, women have limited access to basic health and education services...[they are] shut out of decision-making. Ninety percent of women in many African countries are involved in agriculture. Women suffer when they have to spend even more time growing food on degraded soils and gathering increasingly scarce water and wood. Crops lost because of droughts or flooding contribute to food scarcity – and corresponding increases in food prices – at the same time as women lose a major source of income....As the primary caregivers in practically every society, as custodians of food security and wellbeing in most homes, women are destined to play a key role in what is perhaps the defining battle [climate change] of the 21st century.”³⁷

Impacts on Canadian Inuit

Although some of the most significant impacts of climate change are felt in the global south, scientists have referred to the Canadian Arctic as an “early warning” system where the effects of global warming are startlingly evident. World-

renowned Inuit activist and member of the Order of Canada, Ms. Sheila Watt-Cloutier³⁸ reflects on how global warming is re-shaping the ecology of Canada's north:

[R]apid climate change has profoundly impacted our very right and ability to exist as an Indigenous people. We face dangerously unpredictable weather, extreme erosion along coastal communities and an invasion of new species of insects. In some areas of the circumpolar regions, during certain periods of the year, as travelling and hunting on the land become more dangerous, fewer continue the traditional subsistence way of life. This can mean less and less of our culture is passed down to our young people.³⁹

The melting of Canada's frozen north has an impact on the culture, lifestyle and livelihoods of Inuit peoples. Again, in the words of Ms. Sheila Watt-Cloutier, "we remain, today, a hunting people of the land, ice, and snow... Our hunting culture is not only relevant for survival on the land – it teaches crucial life skills and wisdom that are transferable to the modern world."⁴⁰

Like people in the global south, Canadian Inuit suffer the impacts of climate change disproportionately to their contribution to the problem.

ECONOMIC AND SOCIAL COSTS OF CLIMATE CHANGE

International Climate Change Policy

In 1997 the international community negotiated the Kyoto Protocol. This was the first internationally negotiated agreement to mitigate climate change and concludes in 2012.⁴¹ In December 2009 the international community met in Copenhagen to discuss a new protocol. Two issues were especially important in the negotiations; setting CO₂ emission reduction targets, and establishing funding agreements to support vulnerable nations in the global south to adapt to climate change. Churches and non-governmental organizations like the Climate Change Action network campaigned⁴² for a legally binding agreement that builds on the Kyoto Protocol.

The meeting appeared to stall when China, India, Brazil and South Africa rejected binding targets being imposed on countries in the global south. Late in the negotiations, President Barack Obama called a private meeting with China, India, Brazil and approximately 20 other countries to forge the non-binding agreement called the Copenhagen Accord.

Under the Accord, governments were to register voluntary reduction targets with the UN by January 31, 2010. Canada aligned its reduction targets with US targets, and registered them with the UN. They are well below European Union targets. Fewer than one-third of UN nations registered reduction targets by January 31, and the deadline was extended.

There are limitations to the Copenhagen Accord. The Accord is non-binding. It was negotiated by 25 governments and not adopted by all UN member states. The Accord's legal standing is unclear. Voluntary reduction targets may not be sufficient to avoid catastrophic climate change.

The international community will have an opportunity to negotiate an agreement that builds on the Kyoto Protocol at a meeting in Mexico, December 2010.

Recommendation No. 1 as amended was adopted as follows.

That the Moderator write to the Minister of Foreign Affairs, with copies to leaders of the opposition parties, to express disappointment in the lack of progress made by our country in adhering to the original goals set out in the Kyoto Protocol and to encourage the Government of Canada to work for and support an internationally negotiated binding agreement that builds on the Kyoto Protocol, at the December 2010 climate change meeting in Mexico.

Additional Motion

J.G. Robertson moved, duly seconded, that the Moderator write to the Intergovernmental Panel on Climate Change (IPCC) encouraging them to take all necessary steps to ensure transparency and openness in their climate change deliberations and reports. Adopted.

Mitigation and Adaptation

Mitigation and adaptation are concepts that are prominent in the reports and studies on climate change. Mitigation means implementing policies that reduce GHG emissions and enhance what are known as carbon sinks. A carbon sink could be a forest that absorbs GHG emissions.

Adaptation means putting in place measures that reduce the vulnerability of natural and human systems against actual or anticipated climate change effects. Examples of adaptation include raising river or coastal dikes, planting more temperature shock resistant plants, moving people to more ecologically stable regions, or introducing economic activities that are less vulnerable to the effects of climate change.

Mitigation and adaptation require financing. This is discussed in greater detail in the Financial Support for Mitigation and Adaptation section below. Additionally, mitigation and adaptation strategies and programs rely on strong institutions in the private, public and non-profit sectors. Effective mitigation and adaptation plans must complement each other. Effective plans require an educated population, with a range of skills, to work together in a coherent and integrated fashion. A sophisticated physical infrastructure and the resources to maintain this infrastructure are essential. Effective plans require political will and leadership. Many countries in the global south are ill-equipped to mitigate or adapt to the worst effects of climate change.

Katrina – a Failure of Mitigation

Increased storm severity is one anticipated impact of climate change. Inadequate preparation for severe weather phenomena can have tragic consequences, even in wealthy countries. In August 2005 Katrina, a powerful category five hurricane, devastated New Orleans. The levees in New Orleans were not adequate to withstand the force of hurricane

Katrina. In a June 2006 report on the disaster, the US Army Corps of Engineers admitted that faulty design specifications, incomplete sections and substandard construction of levee segments, contributed to the damage done to New Orleans by Hurricane Katrina.⁴³ A report released by the American Society of Civil Engineers in June 2007 concluded that two-thirds of the flooding in the city could have been avoided if the levees had held. Ill preparedness cost human lives. If a country as prosperous as the US fails to adequately prepare for increasing environmental stresses (such as storm surges), how much more difficult will it be for countries in the global south to be adequately prepared?

Financial Support for Mitigation and Adaptation

The question “Who pays, and how much?” with respect to the cost of mitigating and adapting to climate change, plagues the international community. In 1992, under the UN Framework Convention on Climate Change, countries in the global north recognized an obligation to provide financial support for climate action to countries in the global south.⁴⁴ Sir Nicholas Stern was commissioned by the British government to prepare a report on the cost of climate change mitigation and adaptation. His report, entitled “The Economics of Climate Change, The Stern Review”, argues that “the ethics of adaptation imply strong support from the rich countries to the most vulnerable.”⁴⁵

There is no consensus on how much money is needed for mitigation and adaptation, where it should come from, or how it should be managed. It is generally agreed that mitigation and adaptation costs will increase over time and that public funds are needed to lead the way.

Formulas for determining these costs are based on the “polluter pays” principle (with consideration for ability to pay). Countries in the global north are responsible for more than three quarters of the GHGs causing climate change. Sir Nicolas Stern estimates that the cost of inaction could range from 5% to 20% of the global GDP.⁴⁶ In “The Stern Review”, published in 2007, Sir Nicolas Stern estimated that 1% of the global GDP will need to be spent to tackle climate change. In 2008 he increased this estimate to 2%.⁴⁷ The United Nations Framework Convention on Climate Change (UNFCCC), in turn, has suggested that \$250 billion US dollars would be required for mitigation and adaptation in 2020.⁴⁸ It is generally agreed that the longer it takes to adequately address climate change, the more costly it will be to do so.

The essential issue is that mechanisms are put in place that allow public and private sector funding to be significantly scaled up over time, and that funding agreements (to support countries in the global south) do not have to be renegotiated every year.

Global Commitments

Since the Kyoto Protocol came into effect in 1997, countries in the global south have received less than \$900 million of the \$18 billion (less than 10%) that had been pledged by countries in the global north.⁴⁹ This is troubling; the international community has pledged new funding for adaptation under the Copenhagen Accord, and yet has failed to meet commitments made under the Kyoto Protocol.

Canada’s Commitments

The Pembina Institute is a Canadian non-governmental organization that specializes in climate change policy. The Pembina Institute estimates that since 2000, Canada has spent \$240 million on climate change adaptation, mainly through the Canadian International Development Agency (CIDA).⁵⁰ In 2000 the Canada Climate Change Development Fund (CCCCDF), worth \$100 million, was established to address climate change in the global south. Despite receiving a good evaluation, the fund was not renewed after March 2006.⁵¹ This fund was the most significant effort made by the Government of Canada to integrate climate change and development work in a systematic way. Currently, CIDA’s website lists climate change as a focus under its environmental sustainability programming, but does not provide information on how climate change mitigation and adaptation is addressed in the program, or how much money has been disbursed.

Canada committed \$318 million under the Global Environment Facility (GEF) trust fund between 2002 and 2010, of which approximately one third was directed to GEF climate change-related activities; \$100 million to the World Bank’s Pilot Program for Climate Resilience between 2008 and 2010, making Canada the largest donor of grant funding to date; \$13.5 million to the Special Climate Change Fund for adaptation and technology; \$5.5 million for the Consultative Group on International Agricultural Research under the Climate Change, Agriculture and Food Security Challenge Program.⁵² It is not clear if this is a part of existing official development assistance (ODA) funding, or new funding.

Recommendation No. 2 (adopted, p. 17)

That the Moderator write to the Minister of International Cooperation requesting information on the Canadian International Development Agency’s policies and financial commitments for projects dealing directly with climate change mitigation and adaptation.

New Adaptation Funding

Wealthy northern countries made a collective commitment at the Copenhagen Climate Change Conference for \$30 billion in “new and additional” resources in 2010-2012 to help developing countries reduce emissions, preserve forests and adapt to climate change. No mechanism has yet been designed to guide disbursements. At the time this report was prepared approximately three quarters of the \$30 billion in “new and additional” funding had been pledged by EU member states, Japan and the United States. It is unclear if these are “new and additional” funds. Canada had not yet made a pledge.⁵³

Recommendation No. 3 (adopted, p. 17)

That the Moderator write to the Government of Canada to ask if Canada will pledge “new and additional” adaptation funding under the Copenhagen Accord.

An additional goal of the Copenhagen Accord is to mobilize \$100 billion a year in public and private finance by 2020 to address the needs of countries in the global south. The Accord also calls for the establishment of a Copenhagen Green Climate Fund, a High Level Panel to examine ways of meeting the 2020 finance goal, a new Technology Mechanism, and a mechanism to channel incentives for reduced deforestation.⁵⁴

RESPONDING TO CLIMATE CHANGE

Statements by The Presbyterian Church in Canada On Climate Change and the Environment

As early as 1973, The Presbyterian Church in Canada affirmed the importance of caring for creation in the life and work of the church. The General Assembly has encouraged members of The Presbyterian Church in Canada to be wise stewards of creation. Specific suggestions are summarized in the Social Action Handbook.⁵⁵

Previous General Assemblies have approved statements on the threat posed by global warming to the health, security and stability of human life and natural ecosystems (A&P 1990, p. 415-16); recognizing natural resources as “capital” to be sustained for future generations (A&P 1994, p. 301-13); incorporating the full environmental cost of business activities into the pricing system in both the public and private sectors (A&P 1994, p. 301-13); and access to water by all human beings as a sign of respect for God’s creation and concern for our neighbour (A&P 2005, p. 294-307).

Voices from the Global South

In preparing this report, the International Affairs Committee enlisted the help of Presbyterian World Service and Development (PWS&D) and International Ministries. Mission staff and partners in Kenya, Malawi, Ghana, Nicaragua, Guatemala and India commented on climate change impacts they are witnessing, or know of in their communities and countries, and shared messages they wished to communicate to The Presbyterian Church in Canada. The committee is grateful for their contribution.

Several of our partners expressed concern that their countries, in spite of being the source of comparatively small amounts of GHGs, are being asked to shoulder the burden for the large emitters of the global north. The Blantyre Synod Development Commission (BSDC) of the Church of Central Africa Presbyterian (CCAP) in Malawi reports considerable anger directed at the developed countries. The former colonial powers are seen as having caused environmental havoc while the poorer countries have to bear the consequences.

There is also growing anxiety among our partners that their governments are pursuing carbon-dependant development strategies long-contested in the global north. Roofs for the Roofless in India is critical of the carbon-dependant and polluting nature of India’s development strategies. Coal-fired power plants used to generate electricity are contaminating the air and water for the small cultivators who mostly do not benefit from the power generated. The Garu Presbyterian Community Base Rehabilitation Project in Ghana identifies urbanization and industrialization as two of the main “culprits” causing climate change.

Our partners are challenging The Presbyterian Church in Canada to reflect on its responsibilities as a Christian community and to remember that stewardship includes accountability. As we continue to work with our partners, it is important to acknowledge in humility that our forebears have not always behaved responsibly toward the global south. It is also important to emphasize the community of interests between the global north and south and to keep always the interests of the most vulnerable people in both the global north and south at the centre of our vision.

PWS&D and International Ministries Partners’ Respond to Climate Change

Some of PWS&D’s partners are mitigating the effects of climate change on their communities. SOYNICA in Nicaragua promotes crop diversification, soil and water management systems and seed-recovery of indigenous crops that are adapted to their climate zone. The Fraternidad de Presbiteriales Mayas (FPM) in Guatemala is planting trees. The Shauri Yako Support Centre in Kenya is carrying out an environmental assessment of Chania River, which is drying up.

Plastic bags are the ubiquitous symbol of consumerism. The Madurai Non-Formal Education Centre (MNEC) in South India is working with its constituency, who are mostly women, to substitute cloth bags for plastic.

Partners in South India, Nicaragua, Guatemala and Malawi are involved in public education and advocacy. The New Dawn Association for Community Health and Development (ASDNA) and the Fraternidad de Presbiteriales Mayas (FPM), both in Guatemala, are engaged in public advocacy with various levels of government on policy changes to combat climate change. In Malawi, the Blantyre Synod Development Commission (BSDC) organized citizen forums on climate change in three districts.

Reflections and Suggestions from PWS&D Partners and International Ministries Staff

Dr. Dayalan Devanesen, Vice Chairman of Roofs for the Roofless in India encourages The Presbyterian Church in Canada to develop a rights-based approach to climate change rooted in Christian values. PWS&D projects must safeguard the interests of the most vulnerable populations, who risk being left behind in the rush to ‘modernize’ using polluting carbon-dependent strategies.

Some of our partners urge The Presbyterian Church in Canada to support more projects on education, adaptation and mitigation of the effects of global warming. Ms. Denise Van Wissen Zuniga, International Ministries’ staff in Guatemala, asks that Canadians recognize the contribution we make to climate change and, when suggesting solutions, remember that “our brothers and sisters have the God-given right to improve their living standards.” Youth need to be involved in tackling climate change because “they are the ones who will inherit the earth.”

What We Can Do

The scope and challenges of climate change are enormous, but there are changes that we can make and are making individually and within our congregations. The church can encourage corporations to integrate the risks posed by climate change and the opportunities in tackling climate change. The church has an important voice in conversations with governments about public policies that address mitigation and adaptation, and to encourage the Government of Canada to provide international leadership.

As early as 1990, General Assembly urged sessions to encourage members and adherents to examine their lifestyles in terms of the consumption of resources and the generation of waste (A&P 1990, p. 366). Changes we make as individuals and as families have an ecological impact and send an encouraging message to partners of The Presbyterian Church in Canada. As we share one faith with our church's partners, we share one global climate, and we can support each other in seeking to live as faithful stewards of God's creation.

As Individuals and Families

Simple steps that many of us are already taking include:

- Using compact fluorescent light bulbs instead of incandescent light bulbs.
- Using reusable shopping bags.
- Investing in better home insulation and sealing drafts.
- Turning down the thermostat in the winter, and turning it up in the summer.
- Using a bicycle or walking in good weather.
- Purchasing energy-efficient appliances.

More challenging changes that affect the way we live include:

- Reducing air travel. If flying is necessary, purchase carbon off-sets (see the Justice Ministries report p. 440-46 for more information on carbon offsets).
- Shifting to smaller, more fuel-efficient cars and driving the speed limit.⁵⁶
- Where there is reliable public transit, giving up car ownership.
- Sharing a car.
- Using alternative energy sources from hydro dams, solar and wind. (Check with provincial government for a list of companies.)
- Using push mowers and rakes instead of gas-powered lawnmowers, hedge trimmers and leaf blowers.
- Increasing purchases of locally grown food to lower the carbon footprint and support the local food economy.
- Considering the environmental impact of every purchase, buying what we need and not just what we want.⁵⁷

As Congregations

Many individual initiatives to reduce carbon emissions can be adapted to congregations. Here are initiatives that some congregations are already taking:⁵⁸

- Forming a group to explore your ecological footprint⁵⁹ as a way to increase your awareness. Identify the impacts and brainstorm how to reduce them.
- Buying locally grown food for church dinners and picnics, such as "hundred mile meals," and outreach programs.
- Structuring programs to recycle more, reduce the use of disposable items, or cut down on travel.
- Conducting an energy audit⁶⁰ on your church building, and taking steps to make it more energy efficient.
- Retrofitting older buildings or building more energy efficient new buildings. Loans up to \$100,000 are interest-free if repaid by the end of the twelfth year of the loan and are available from The Presbyterian Church in Canada's Lending Fund (A&P 2008, p. 212). Costs for retrofitting can be recovered over time through the resulting savings, but provide immediate carbon emission reductions. Some municipal and provincial government programs will partially reimburse the cost of energy audits.
- Forming a "Green Team"⁶¹ in your church with people of different ages and backgrounds to encourage thinking ecologically in all aspects of the church's life.
- Discontinuing the use of disposable products when alternatives exist, and enjoying the conversation and fellowship (and savings) as you clean up together afterward.
- Celebrating Earth Day⁶² every year on or near April 22nd. Make caring for creation the focus of worship.
- Having a "walk to church" Sunday and promoting it in the neighbourhood.
- Using KAIROS' Re-energize...Time for a Carbon Sabbath Campaign liturgical and education resources. Congregations in 18 presbyteries across Canada have shared stories of their involvement in this campaign, and their work to honour God as Creator.

Faith and the Common Good is a Canadian interfaith and intercultural organization that provides excellent resources for congregations seeking a greater integrity between the values we hold and the way we live. Its "Renewing the Sacred Balance" program, includes a focus on "Greening Sacred Spaces" that provides resources, workshops and case studies that will help congregations reduce greenhouse gases and live more sustainably (see also A&P 2007, p. 35, 326).

Recommendation No. 4 (adopted, p. 17)

That congregations be encouraged to form study groups to learn about climate change and consider the steps that can be taken individually, as congregations and as communities to reduce carbon emissions.

Justice Ministries welcomes invitations to speak to and work with congregations and presbyteries about climate change.

Recommendation No. 5 (adopted, p. 17)

That congregations be encouraged to host community forums on climate change.

The International Affairs Committee would like to celebrate and promote initiatives being taken by courts and members of the church.

Recommendation No. 6 (adopted, p. 17)

That courts of the church be invited to share with the International Affairs Committee (through Justice Ministries) how they are reducing their carbon emissions and caring for creation.

The Church in the Public Square

There are opportunities for the church to be involved in public policy discussions at the local, provincial and federal levels. For example, in the fall of 2009, Presbyterians were asked to sign the “KyotoPlus” petition, which called on the Government of Canada to take a leadership role at the Copenhagen meetings in December 2009. Close to 153,000 Canadians signed the petition circulated by KAIROS and other organizations across Canada.

In addition to urging explicitly environmental measures, Canadians can advocate for a greener approach to public policy. For example, in its response to the 2009 Federal Budget, Citizens for Public Justice, a Christian public policy organization, observed that “Budget 2009 included measures for funding carbon capture and storage projects [but that these] projects fail to create incentives for investing in new, green technology, and do not encourage dirty, extractive industries to move away from their harmful practices.” CPJ highlighted the failure of the budget to include green infrastructure funding for social housing initiatives, the automotive and manufacturing sectors, or public transit initiatives.⁶³

Church and business can also work together to improve the environment. For example, Nova Scotia Power will donate free energy-efficient light bulbs to churches. Other power suppliers might be encouraged to do the same.

CONCLUSION

Ecological awareness derives from the grace of God and requires a corresponding metanoia, (a transformation, change of habits and lifestyles).

This statement was made by Bartholomew 1, Ecumenical Patriarch, in an address at the World Council of Churches’ 9th Assembly in Porto Alegre, Brazil, February 14-23, 2006.

He continued, “Paradoxically, we become more conscious of the impact of our actions on other people and on creation when we are prepared to surrender something. For in emptying our heart of our selfish desires, we allow space for the grace of God. A transformed worldview allows us to perceive the lasting impact of our ways on other people, especially the poor, as the sacred image of Christ, as well as on the environment.”

We are at a threshold. The choices we make today will determine the depth of the impact of climate change on future generations. We are given the freedom to choose how we honour God as Creator (Living Faith, 2.1.2 and 2.3.3), and are humbled by such a tremendous gift.

This report concludes by sharing voices from The Presbyterian Church in Canada’s PWS&D and International Ministries’ partners and overseas staff in the global south, and the Canadian Inuit community.

As Christians, we have the divine mandate to rule over the creation of God (Genesis 1:8). Ruling the creation of God includes managing, controlling, organizing and conserving the resources entrusted to us to enhance sustainable development. As the canker of rapid climate change is assuming alarming proportions with its concomitant resource depletion, let us be mindful else we compromise our mandate. (John Alo, Project Director, Garu Presbyterian Community Base Rehabilitation Project, Ghana)

The negative effects of climate change are already being felt in our areas of work, particularly in rural areas, and that this therefore necessitates project initiatives [oriented] toward education, awareness-raising, adaptation and mitigation of the effects of global warming. (ASDNA, Guatemala)

The message we would like to share is let’s work together to care for our environment by raising awareness among community members....This is the time to teach new strategies because damage that has already been done cannot be reversed, instead this is the time to act to adapt and mitigate the effects of the damage....We have to communicate this to families who have little knowledge about the damage [that has been done to the environment] and the effects that climate change will bring about for us. (SOYNICA, Nicaragua)

Today’s financial structures and policies on climate change are built around principles that benefit the few at the expense of the many. There is a need for economics to be rooted in Christian values. In order to deal with climate change, the church must continue its work in transforming the lives of people. One must understand that it is God and not the material world that is the ground for our being. Only then can we expect a more equitable economic structure and policies on climate change, as well as more compassionate social reforms in accordance with God’s Kingdom in that world that “God so loved...”. (Dr. Dayalan Devanesen, Roofs for the Roofless, India)

Climate change threatens to erase the memory of who we are, where we have come from, and all that we wish to be. If we protect the environment and climate of the Arctic, keep our Inuit hunting culture alive, and stay connected to the rhythms and cycles of nature we will, as peoples and as Canadians, prevail and thrive. (Sheila Watt-Cloutier, Canada)⁶⁴

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End Notes

Full references are in “Resources Consulted”. Citations are listed by author (or organization, where no author is listed). Page numbers are included where possible. Some online articles and speeches do not have numbered pages.

1. IPCC, “Synthesis Report”, (Summary for Policy Makers), p. 2.
2. The scripture quotations are from the New Revised Standard Version Bible, by the Division of Christian Education of the National Council of the Church of Christ in the USA, 1989.
3. “The Accra Confession”, p. 4, paragraph 20.
4. The Rev. Dr. Patricia Dutcher-Walls, Vancouver School of Theology, is thanked for her help with the biblical background of the terms “subdue” and “dominion”.
5. Wagner, p. 52-57.
6. Plaut, p. 22.
7. Zobel, p. 330-336.
8. Brueggemann, p. 106.
9. LenkaBula, p. 47.
10. Hall, p. 209.
11. “The Accra Confession”, p. 5, paragraph 34.
12. IPCC, “Synthesis Report”, (Summary for Policy Makers), p. 2.
13. IPCC, “Physical Science Basis”, p. 118.
14. IPCC, “Synthesis Report”, (Summary for Policy Makers), p. 5.
15. IPCC, “Synthesis Report”, (Summary for Policy Makers), p. 5.
16. IPCC, “Guidance Notes”, p. 1-4.
17. For more information, read George Monbiot’s “Heat: how to stop the planet from burning”.
18. Pearce, online article, no page number.
19. This statement was made by The Rev. Tofigo Falani, President of the Congregational Church of Tuvalu, at a gathering sponsored by the World Council of Churches, before the Copenhagen Climate Change Conference in December 2009.
20. IPCC, “Synthesis Report”, (Summary for Policy Makers), p. 52.
21. IPCC, “Synthesis Report”, (Summary for Policy Makers), p. 52.
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23. Ramesh, online article, no page number.
24. IPCC, “Synthesis Report”, (Summary for Policy Makers), p. 50.
25. Rajan, p. 1-24.
26. IPCC, “Synthesis Report”, (Summary for Policy Makers), p. 50.
27. Evans, speech, no page number.
28. Hetherington, p. 76-82.
29. United Nations Environmental Programme, “Environmental Degradation”.
30. United Nations Environmental Programme, “Environmental Degradation”.
31. Oxfam, “Now or Never”.
32. Traynor, online article, no page number.
33. Schori, online article, no page number.
34. Eriksen, online article, no page number.
35. Ahmed, online article, no page number.
36. Oxfam, “Suffering in Science”, p. 1-8.
37. Reyes, speech, no page number.
38. In 2007, Sheila Watt-Cloutier was a Nobel Peace Prize nominee. Her work focuses on persistent organic pollutants and global climate change.
39. Watt-Cloutier, speech, no page number.
40. Watt-Cloutier, speech, no page number.
41. The Kyoto Protocol called for a 6% reduction in GHG emissions over 1990 levels to be reached by 2012.
42. The KyotoPlus campaign, run by the Climate Action Network, called for a 25% reduction in GHG emissions over 1990 levels, to be reached by 2020. KAIROS facilitated support for this campaign in the Canadian ecumenical community.
43. US Army Corps of Engineers, “Performance Evaluation”.
44. Demerse, p. 1.
45. Stern, p. 42.
46. Stern, p. xv.
47. Jowitz, online article, no page number.

48. Four organizations (the World Bank, the UNFCCC, Oxfam and the UN Development Program) have produced reports that estimate the cost of climate change adaptation that are frequently cited. These estimates (in Canadian dollars) range from \$14.7 billion to \$116.8 billion per year for developing countries (Demerse, p. 10).
49. Vidal, p. 5.
50. Demerse, p. 25.
51. Stefov, correspondence, no page number.
52. Government of Canada, "Backgrounder: Canada's Action".
53. World Resources Institute, "Summary of Climate Finance".
54. See Pew Centre on Global Climate Change at www.pewclimate.org/international/copenhagen.
55. See "Caring for the Planet" in the Social Action Handbook, online at www.presbyterian.ca/justice.
56. *Toronto Star*, "Environmental Tips".
57. Additional suggestions are available at www.carbondiet.ca.
58. Adapted from Masterton, "Earth Keeping", p. 14-15.
59. See www.footprintnetwork.org.
60. KAIROS and Faith and Common Good have energy audit guides to assist congregations wishing to conduct their own energy audit. Contact Justice Ministries for a copy.
61. Faith and the Common Good has a guide with suggestions for forming "green teams". Contact Justice Ministries for a copy.
62. Visit Presbyterian Church (USA)'s website (www.pcusa.org) for Earth Day worship resources.
63. "Stimulus Package Remains a Lost Opportunity", Citizens for Public Justice website, January 28, 2009, online at www.cpj.ca, accessed February 25, 2010.
64. Sheila Watt-Cloutier has no affiliation with The Presbyterian Church in Canada.